

REMARKS

Reconsideration of the application is requested in view of the modifications above and the remarks below. Applicants have indicated in Claim 1 that the alkali metal compounds are used as a mixed salt. Support for this can be found in the originally filed Claim 5. Claim 5 has been cancelled accordingly. The amendments above have been made to place the application in condition for allowance or to better place the application in condition for appeal.

1. Rejection Under 35 USC 102

The Office Action rejected Claims 1, 2, 6, 7, 9-10, and 12 under 35 USC 102 over U.S. Pat. No. 4,402,737 (Kronenwetter). The rejection should be withdrawn in view of the remarks below.

Applicants' invention, as encompassed by these claims, relates to a process that reduces tungsten oxide powders, molybdenum oxide powders, or mixtures thereof, in the presence of alkali metal compounds, wherein these alkali metal compounds are used in the form of a mixed salt. The process prepares tungsten powder, molybdenum powder, mixtures thereof, or a carbide. The at least two alkali metal compounds are used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step ((Li, Na, K)₂WO_z, (Li, Na, K)₂MoO_z) have a melting point of less than about 550°C. The value of z is from 3 to 4. In one embodiment, the invention relates to a tungsten carbide powder prepared according to Claim 1.

It is well settled that in order for a prior art reference to anticipate claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in prior art. The disclosure requirement under 35 USC 102 presupposes knowledge of one skilled in art of claimed invention, but such presumed knowledge does not grant license to read into prior art reference teachings that are not there. See *Motorola Inc. v. Interdigital Technology Corp.* 43 USPQ2d 1481 (1997 CAFC).

Kronenwetter does not disclose each and every element of Claims 1, 2, 6, 7, 9-10, and 12 with sufficient clarity to prove Applicants' invention existed in the prior art. As discussed in Applicants' response dated September 11, 2003, amended Claim 1 includes the features of originally filed Claim 5 which does not stand rejected as being anticipated by Kronenwetter.

The Advisory Action alleges that the proposed amendment places limitations of a rejected claim into an independent claim, and that even if the second alkali metal is merely an impurity, it is nonetheless present in the prior art. However, Kronenwetter does not disclose using the alkali metal compounds as a mixed salt.

One skilled in the art would not be motivated to use the alkali metal compounds as a mixed salt. In fact, Kronenwetter teaches away from using the alkali metal compounds as a mixed salt because using sodium or potassium results in FSSS sizes that are even smaller than that found in using lithium (Kronenwetter, Table 1). Additionally, the Office Action admits that sodium, potassium have a less severe effect on producing large grain sizes than lithium (Office Action, page 5, lines 3-5). Further, such a mixed salt of Applicants' invention requires a separate and additional process step, and one skilled in the art would not be motivated to further add steps to the process.

Thus, one skilled in the art would not be motivated to modified the teachings of using one of sodium or potassium of Kronenwetter and combine two alkali metal compounds used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step $((\text{Li}, \text{Na}, \text{K})_2 \text{WO}_z, (\text{Li}, \text{Na}, \text{K})_2 \text{MoO}_z)$ has a melting point of less than about 550°C, wherein the value of z is from 3 to 4, and wherein the alkali compounds are used as a mixed salt to arrive at Claim 1 of Applicants' invention.

Claims 2, 6, 7, 9-10, and 12 depend from independent Claim 1, and accordingly are believed to be allowable. Reconsideration is requested.

2. Rejection Under 35 USC 103

The Office Action rejected Claims 3-5, 8 and 11 under 35 USC 103 over Kronenwetter. The rejection should be withdrawn. In view of the modifications above, the remarks below refer to Claims 3, 4, 8 and 11.

Applicants' invention, as encompassed by these claims, relates to a process that reduces tungsten oxide powders, molybdenum oxide powders, or mixtures thereof, in the presence of alkali metal compounds, wherein these alkali metal compounds are used as a mixed salt. Applicants' process prepares tungsten powder, molybdenum powder, mixtures thereof, or a carbide. At least two alkali

metal compounds are used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step ((Li, Na, K)₂ WO₃, (Li, Na, K)₂MoO₃) has a melting point of less than about 550°C. In one embodiment, the alkali compounds are used in a total amount that ranges from about 0.2 to about 1.5 mole %, based on the tungsten and/or molybdenum oxide. In another embodiment, the alkali compounds have a molar ratio of Na to Li of from about 0.9 to about 1.26 and wherein, in the further presence of a potassium compound, the potassium replaces Na and/or Li up to about 40 mole %. In another embodiment, the invention relates to a molybdenum metal powder prepared according to Claim 1.

The rejection does not establish a *prima facie* case of obviousness. It is well settled that to establish a *prima facie* case of obviousness, the USPTO must satisfy all of the following requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification must have had a reasonable expectation of success, as determined from the vantage point of one of ordinary skill in the art at the time the invention was made. *Amgen v. Chugai Pharmaceutical Co.* 18 USPQ 2d 1016, 1023 (Fed Cir, 1991), *cert. denied* 502 U.S. 856 (1991). Third, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496, (CCPA 1970). The rejection should be withdrawn in view of the remarks below.

Claims 3-5, 8 and 11 depend from independent Claim 1 which as discussed is believed to be allowable. Accordingly, Claims 3-5, 8 and 11 are believed to be allowable.

The Office Action alleges that Table 1 of Kronewetter et al "Shows that sodium, potassium and lithium are all used as dopants in various amounts in the oxide blends" (Office Action, page 3, lines 14-15). The Office Action further indicates that Applicant must show that some unexpected beneficial synergistic effect is witnessed when the particular mixture of alkali metals are used in order to have any claim of patentability (Office Action, page 3, line 21 to page 4, line 2).

Kronewetter, however, discloses using one of the sodium, potassium or lithium. Further, one of ordinary skill in the art would not be motivated to combine the alkali compounds as a mixed salt to obtain unexpected results of Applicants' invention of increasing the average particle size (FSSS) greater than the FSSS that results from using one of sodium, potassium or lithium as suggest by Kronenwetter. Surprisingly, Applicants found that using at least two alkali metal compounds as a mixed salt unexpectedly results in an increase of the FSSS value of the metal powder produced as well as of the FSSS value of a metal carbide powder produced from such a metal powder. Applicants' Examples 1 and 2 evidence such surprising beneficial synergistic results. In Example 1 a mixed salt of the alkali metal compounds was used, whereas in Example 2 a mixture of individual alkali carbonates was used. As can be seen from these examples using a mixed salt results in an remarkably increase of the average particle size of the tungsten carbide produced. The FSSS of the WC powder produced according to Example 1 is 67 μm , and the FSSS of the WC powder according to Example 2 is only 53 μm . Such information evidences the advantages of Applicants' invention over Kronenwetter, and nowhere in Kronenwetter is such as advantage taught or suggested. Reconsideration is requested.

In view of the foregoing amendments and remarks, allowance of all the pending claims is earnestly requested.

Respectfully submitted,

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